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# THE BEST AVAILABLE CONTROL TECHNOLOGY

# GUIDELINES

## PART I

## PROCEDURE OF DETERMINING WHETHER BACT IS TRIGGERED

**January 11, 2000**

### *GENERAL*

The Best Available Control Technology (BACT) Guidelines summarize the key policy issues and outline the review process and the procedures of how a BACT process should be implemented.

Maricopa County Air Pollution Control (MCAPC) Regulations, Rule 241, Section 301, provides the following requirements:

301 **Best Available Control Technology (BACT) required:** An applicant for a permit or permit revision subject to Rules 210, 220, or 230 of these rules shall apply BACT for each pollutant emitted which exceeds any of the threshold limits set forth in any one of the following criteria:

301.1 Any new stationary source which emits more than 150 lbs/day or 25 tons/year of volatile organic compounds, nitrogen oxides, sulfur dioxide, or particulate matter, more than 85 lbs/day or 15 tons/year of PM10; or more than 550 lbs/day or 100 tons/year of carbon monoxide.

301.2 Any modified stationary source if the modification causes an increase in emissions on any single day of more than 150 lbs/day or 25 tons/year of volatile organic compounds, nitrogen oxides, sulfur dioxide, or particulate matter, more than 85 lbs/day or 15 tons/year of PM10; or more than 550 lbs/day or 100 tons/year of carbon monoxide. BACT is only required for the sources or group of sources being modified.

### *PRE-BACT REQUIREMENTS, REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT)*

Maricopa County requires all sources to apply RACT until the emission level reaches the appropriate BACT thresholds.

Before the source reaches the appropriate BACT thresholds, all sources are required to comply with Regulation III (300 Series of the County's Rules). The 300 series County Rules are in fact RACT Rules. For sources not subject to Regulation III, the lowest emission limitation is established that a source is capable of achieving by the application of

control technology (Rule 100, Section 279). That technology must be reasonably available considering technological and economic feasibility to the source.

## ***BACT TRIGGER LEVEL***

To determine whether a BACT requirement is triggered, the County has a policy to evaluate emission levels of a permit application/revision of a new source or modification to the existing source based on:

1. A RACT controlled emission level.

2. An emission level that takes into account the effect of a control device that is part of the design of the subject emission source, provided that the effect on the reduction of emissions is incorporated into an enforceable permit condition.

3. An emission source that has the effect, and/or limitations incorporated into the permit as an enforceable permit condition from:
   - A fully functional add-on control equipment.
   - Physical, material, and/or operational limitations.

## ***DEFINITIONS AND DISCUSSIONS***

### ***DEFINITIONS:***

**SOURCE:** BACT Rule 241 does not provide definitions for "source" or "modified stationary source". However, Rule 100, Section 287, defines "source" as follows:

"*…Any building, structure, or facility that may cause or contribute to air pollution…"*

Furthermore, the ARS Section 49-401.01.6. states that *"Building", "structure", "facility", or "installation" means all of the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person or persons under common control except the activities of any vessel…"*

**MODIFICATION:** Rule 100, Section 259, defines a "modification" as follows:

*A physical change in or change in the method of operation of a source which increases the actual emissions of any regulated air pollutant emitted by such source by more than any relevant de minimis amount or which results in the emission of any regulated air pollutant not previously emitted by more than such de minimis amount.*

***DISCUSSIONS:*** To determine a net emission change from a source before and after the change/modification, or the difference between the old actual and the new projected actual emissions (or PTE for any new facility without enforceable limitations). Several factors must be considered and conditions be met in order to establish a credible emissions reduction and the associated net emissions change determination.

For the purpose of determining of net emissions increase, the source may want to claim the emissions reduction credit, if available. To first determine whether a logged decrease in existing emissions is credible and will be recognized by the Department, please refer to requirements outlined in Rule 100, Section 260.

Several highlights from Rule 100, Section 260 as well as the Department guidelines and interpretations are outlined as follows:

- A decrease in emissions before the change must be at stationary source. In other words, any reduction in emissions from a portable source is not qualified.
- Any change in emissions before and after the change/modification must be contemporaneous.
- Reduction must be the same pollutant as the emissions increase.
- The change/modification that results in decrease in actual emissions for the source to claim credit must be properly logged and documented in accordance with Rule 220, Section 404.2, e. A copy of all logs shall be filed to the Department within 30 days after each anniversary of the permit issue date.
- The actual emissions increase and decrease must have occurred within 5 years. If the 5-year period is passed, a shake down period of up to 180 days is allowed beyond 5 years after start up when determining emissions after the change.
- Actual emissions for a new facility or a modified source is defined in Rule 100, section 204.4. The actual emissions will be projected emissions based on applicable control equipment requirements and projected conditions of operation.
- BACT Rule 241 only uses the term "increase in emissions" in Section 301.2. The Department interprets this term as "net emissions increase".
- The "increase in emissions" or "net emissions increase" shall be calculated by comparing the difference in emissions from "actual" before the change to "PTE" or "projected actual if the enforceable limitation is already in place after the change.
- The emission reduction must be real, quantifiable and enforceable. In order to be contemporaneous, the change must be the result of a physical or operational change at a stationary source and changes must include the above time frame considerations. For the purpose of this procedure, "enforceable" means all limitations, conditions must be in the permits.
- The decrease in emissions must occur before the proposed emissions increase occurs.

## ***CONCLUSION:***

Based on the above definitions of "source" and "modification", along with the interpretation of "increase in emissions", the net emissions increase is a source wide determination taking into account all credible emission reductions at the source.

# THE BEST AVAILABLE CONTROL TECHNOLOGY

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## PART II

## BACT REVIEW PROCEDURE

## January 11, 2000

### *GENERAL*

Once BACT (Rule 241, Section 301) is triggered, the county's approach to determining BACT is to place on the source the responsibility for presenting and defending the technology selection. BACT is then to be determined by the County on a case-by-case basis rather than automatically applying an applicable standard, if any.

Normally, BACT should address control of each emission point at a facility, including fugitive as well as stack emissions. Upon review of a proposed control method, our determination of BACT is to be performed on a case-by-case basis considering energy, environmental, and economic impacts and other costs.

### *THE TOP-DOWN ANALYSIS*

1. The top-down analysis requires that all available control technologies are ranked in descending order of effectiveness. The applicant has the primary responsibility to rank the effectiveness of each control technology applicable to the subject emission source.

2. To streamline the above selection process, and also serve as an interim measure, a control technology listed by South Coast Air Quality Management District (SCAQMD) will be accepted by the County as a viable alternative.

3. Should the applicant decide not to apply the top-ranked control technology nor to use the applicable control technology listed by SCAQMD, the applicant must conduct a cost effectiveness analysis to justify the economic impact that the most stringent (top-ranked or listed) control technology is not achievable.

4. For the cost effectiveness analysis, the applicant should use the discounted cash flow (DCF) method in order to compare different control methods for cost effectiveness. In summary, the DCF method calculates the present value of control costs over the life of the control equipment by adding the capital cost to the present value of all annual costs over the life of the equipment (assumed to be 10 years). The DCF method is chosen because it can take into account annual operating, maintenance and utility costs that are not constant each year.

5. The total annualized cost is then divided by the annual emission reduction to obtain the cost effectiveness in dollars per ton.

6. As resources permitted, a study of the cost effectiveness values (CEV) for each criteria pollutant will be planned in the coming months and shall be updated periodically.

7. Before a CEV value for each criteria pollutant is developed, a "case-by-case" determination is to be used when evaluating cost effectiveness analysis until the above study is completed.

## ***SECTIONAL BACT CONTROL***

Upon the determination that the BACT requirement is triggered, the direct cost for each control system proposed as BACT or control alternative should be presented for a whole facility or the entire modification. If the costs of BACT controls become prohibitive, the County may consider a cost analysis based on the incremental cost for each sectional control system. The cost effectiveness for each sectional control system will be a decision factor in determining which sectional BACT control system should apply. In other words, one or more sections of the facility may be under BACT control due to the cost effectiveness consideration, while the other sections could be determined as an equivalent BACT control area.